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PRINCIPLES AND PROCEDURE GOVERNING THE CLASSIFICATION AND SEGREGATION OF AGRICULTURAL AND FOREST LANDS IN THE NATIONAL FORESTS.

INTRODUCTION.

National Forests exist for the purpose of insuring a continuous supply of timber and the regulation of the flow of streams. The lands, therefore, of which the National Forests are composed were selected from the public domain on account of their value and usefulness for such purposes.

With the increasing realization that the Nation's timber resources must be protected and with the immense growth of irrigation interests and the rapidly extending importance of water-power development the necessity of retaining permanent control of the forests of the public domain, vital to the perpetuation of these resources, has resulted in Congress passing various acts designed for that purpose and to secure the maximum utility from such areas.

The first forest reserves were so designated under the provisions of the act of March 3, 1891 (26 Stat., 1095). This law merely provided for the reservation of land for timber purposes. The act of June 4, 1897 (30 Stat., 11), provided both for the production and supply of timber and the protection of watersheds, but expressly stated that it was not intended to include in such reservations lands chiefly valuable for their minerals or for agriculture.

Since the passage of the last-named act, its provisions have continued to control the selection of lands for timber and watershed purposes, and no National Forest has been created without previous examination and classification of the area which established the fact that the reservation, as a whole, was of the character authorized by law.

The policy which actuated the lawmaking body in creating the National Forests is founded on the fundamental principles that forest lands must, in the long run, be handled under public control, and that the public purposes served by these Forests can not be secured under private ownership. Equally sound is the principle that lands chiefly

valuable for agriculture will be most successfully managed when made a basis for home building and developed under private ownership.

In conformity with the law and this policy, the boundaries of the National Forests have been so drawn as to exclude, so far as possible, all bodies of agricultural land. As time and money have made such work possible, these boundaries have been reexamined, and where errors have been discoverel in the original reservations, the lines have been redrawn to correct such errors and carry out the intent of the law.

It is recognized, however, that in setting aside any large area, such as a National Forest, there may be included some lands with cultivable soil which present opportunities for permanent homes and communities. As a matter of fact, such areas of agricultural lands are very limited in the National Forests, because the Forests usually occupy high, rugged, cold mountain districts where agricultural possibilities are very restricted. Yet, however limited in area and isolated as to locality, such patches of agricultural land should be allowed to pass into private ownership for development into farms, if large enough and productive enough to constitute practical farm units. The only exception to this rule is where such action would conflict with the practical application of existing laws or the purposes for which the Forests were created, as later explained in this outline under the heading, "The listing must not injure the National Forest."

To meet the problem presented by these isolated tracts of agricultural land lying within the boundaries of the National Forests, the Forest homestead law was passed by Congress June 11, 1906. By July 1, 1912, about 12,000 homesteads, aggregating a total of 1,144,359 acres, had been examined, listed as agricultural, and opened to homestead entry.

While the act of June 11, 1906, met an urgent need, its workings did not operate to the entire satisfaction of either the home seeker or the Forest Service. It was unsatisfactory to the Forest Service because its application, under the conditions imposed, resulted in piecemeal examination, and prevented the formulation of permanent plans for the protection, management, and use of the Forests. Worse yet, it placed the home seeker in many instances at the mercy of professional land sharks. No special funds were provided for carrying out the law, and an appropriation, already too limited for adequate protection or satisfactory administration, was drawn upon heavily in order to meet the pressing demands of land seekers.

The first areas examined were considered largely upon the application of settlers who were living upon land within the exterior boundaries of the Forests when they were proclaimed. The presidential

proclamations always guarded the right of settlers to occupy the land so long as they continued to comply with the law, but they were unable to make filing or final proof and secure title to the land until surveyed. Since the Forests are largely in the rugged mountain regions, where the system of public-land surveys can not be extended for many years, the Forest homestead law became a real boon to settlers upon unsurveyed lands, because it provided the means whereby they might file upon their land, and, in due process, secure a survey and receive a patent from the Government.

The application of the law in such cases was generally satisfactory to both the settler and the Government. It was also generally satisfactory to people living in and near the National Forests, who were familiar with the character of land embraced by them, and knew the location of the most desirable areas having agricultural possibilities.

But in dealing with applicants for land who were not familiar with local conditions or the specific areas applied for the law was unsatisfactory both to the applicant and the Government. The law had authorized the opening to settlement and homestead entry of all land "chiefly valuable for agriculture" which, in the opinion of the Secretary of Agriculture, might be "occupied for agricultural purposes without injury to the forest reserves and which are not needed for public purposes." It also granted a preference right of 60 days to the settler, or, in case the land was not occupied by a settler, to the first person applying for it.

Advantage was taken of this preference right to the first applicant by unscrupulous sharpers and real-estate agencies in some of the larger western cities. Representations were made to land seekers unfamiliar with the facts to the effect that the National Forests contained vast bodies of agricultural land which would be examined and opened to entry upon application. These swindlers assured the would-be homesteader that in consideration of a fee, ranging from $5 to $100, paid by him to the real-estate man in advance, the latter would secure for the land seeker the right to have 160 acres of land in the National Forests examined, which land, if found chiefly valuable for agriculture, would be opened to entry, and the applicant would have a 60-day period in which to file in advance of anyone else.

Such operators always kept well within the law, as all they promised was to secure for their client the examination of 160 acres of land and a preference right to file *if* the land were opened to entry; but, owing to the quite hazy conception of the public-land laws, a great many people were actually robbed in this way.

Sometimes the operator made an effort to see that the land described in the application signed by his client was located where it might have some agricultural value; just as often the land described in the application was located on a rocky mountain side, impossible

of cultivation or even permanent occupancy. This sort of thing made endless work for the Forest Service by requiring the examination of land clearly nonagricultural in character, land which the applicant would neither want nor take if he had ever seen it. On the other hand, this system defrauded the home seeker of his money, and caused bitterness and disappointment on his part, which the operator in self-defense naturally deflected against the Forest Service by inuendoes of error, misrepresentation, prejudice, and fraud.

As a matter of fact, the law and procedure were defective in failing to provide a system for bringing together the agriculturist and the agricultural land. To remedy the defects of the act of June 11, 1906, Congress passed the act of August 10, 1912, which provides as follows:

> That the Secretary of Agriculture is hereby directed and required to select, classify, and segregate, as soon as practicable, all lands within the boundaries of National Forests that may be opened to settlement and entry under the homestead laws applicable to the National Forests, and the sum of $25,000 is hereby appropriated for the purposes aforesaid.

This law remedies the defects in the previous law and procedure by providing funds to carry on the work more expeditiously and by providing for systematic classification and segregation. It is believed that this classification will make it possible to supply the home seeker with accurate information regarding any agricultural lands in the Forests, and hasten their settlement and improvement. At the same time the permanent segregation of the lands chiefly valuable for agriculture from the permanent Forest lands will make possible the application of rational, comprehensive, systematic plans for the future administration and use of the Forest areas. These instructions are designed to secure the prompt and uniform application of this law, to the end that the greatest benefit may accrue to the public through practical agricultural development and forest management.

PRINCIPLES.

The law places upon the Secretary of Agriculture the duty and responsibility of examining and of listing for settlement and homestead entry all lands in the National Forests which are found to be "chiefly valuable for agriculture, and which, in his opinion, may be occupied for agricultural purposes without injury to the forest reserves, and which are not needed for public purposes."

In applying the provisions of this law there are a few simple, fundamental principles which should be firmly kept in mind.

In the first place, as already explained, the law has expressly limited the purposes for which National Forests may be created to the production of timber and the protection of forest and watershed.

Under date of February 7, 1910, the Secretaries of the Interior and of Agriculture submitted a letter to the President, which was approved by him, defining very clearly the character of lands which Congress contemplated might be included in National Forests. It is unnecessary to repeat these rules here or to dwell upon them further than to say that each Forest in its entirety and all large units of Forest land must meet their requirements, otherwise they should be eliminated. This, however, is boundary work. The two tie in together very closely, yet this distinction should be kept in mind: Congress empowered the President to create National Forests and authorized the Secretary of Agriculture to classify and list for entry lands in the Forests which he found chiefly valuable for agriculture. In accordance with this authority, if lands are found in the Forests which are chiefly valuable for agriculture, the Secretary so classifies them and lists them for entry; but if the lands are found to be undesirable forest lands but not valuable for agriculture, the facts are reported to the President with the recommendation that they be eliminated.

In examining, classifying, and listing for homestead entry, lands in the National Forests which are "chiefly valuable for agriculture," the terms quoted are used in their broadest sense. By "agriculture" is understood the production of farm crops under established farm methods. Values are not arbitrarily measured in dollars and cents, according to the fluctuating market prices of the day, but are determined upon broad lines for the period of contemplated use.

The report of the committee appointed by the National Academy of Sciences made to and at the request of the Secretary of the Interior, Hoke Smith, May 1, 1897, upon which the act of June 4, 1897, was based, recites one of the distinctive features of forestry:

> Dealing with crops which often do not reach maturity until the end of one or two centuries, it can only be made profitable by carrying out without interruption and under thoroughly trained officers, plans which must often be followed during the lives of several generations of men.

A plan and crop, the success of which depends upon following a consistent course for such long periods of time, can not be changed with every periodic fluctuation in market prices. The orchardist who changes his plans and replants his acres this year with apples, next year with pears, and next year with plums, as the market price of fruits fluctuates, would end his career fruitless.

It follows, therefore, that in order to carry out the evident intent of Congress, this classification, when made, must be made on broad and liberal lines and as a permanent segregation. In this work of segregation the aim must be to secure Forest units which may be properly administered. The very character of forest administration makes it necessary to secure, as soon as possible, permanent boundary

lines not only on the exterior margins of the Forests but also between the permanent Forest areas and those which should pass to private ownership for other purposes. The objects of Forests will be accomplished only by an administration which takes into consideration a plan of management for a long term of years. Every operation of the Forests has its effect on the future development of the timber, the location of the cuttings, the aggregate annual amount cut, and the character of the operations, which refers to reforestation and its permanent influence on the production of timber and the administration of the Forests in the future. This is true also of the work of protection and improvement. It would be a short-sighted policy to overlook these considerations in attempts to practice forestry on land which may be later excluded from the Forests. Money expended in forestry operations and in protection or on improvements on such land would be largely lost. The land classification now in operation should and must result in an early determination not only of the external boundary lines but of the lines within the Forests of those lands which must be retained permanently for forest production. At the same time the classification designates the areas which are "chiefly valuable for agriculture." From every standpoint of good public policy such areas should be settled as soon as practicable.

Clearly this classification should be a practical and sensible one, and one best suited to meet the problems presented. It should be as liberal as possible to both agriculture and silviculture. When lands are found that are chiefly valuable for agriculture and so situated as to be listable the lines should be drawn liberally to the end that the resulting farm units may, if possible, become prosperous and productive farms. On the other hand, where forest lands are retained for silvicultural purposes the lines likewise should be drawn so as to make the practice of forestry practicable. Land that will raise timber will also produce certain farm crops in a limited way with sufficient expenditure of money and labor. It is usually impossible, therefore, to attempt to segregate from the timber land all land having agricultural characteristics. A common-sense classification is all that good economics demands and, manifestly, is all that the law contemplates. The result will be that our agricultural areas will contain some forest land and our forest areas some land having agricultural value. To attempt an absolute segregation into separate classes would be fatal to both agriculture and forestry.

It was clearly the intent of Congress in the enactment of the Forest homestead law to make it possible for settlers to secure lands suitable for cultivation, as the basis for home building. After classification, the suitable lands may be acquired under the homestead law with its requirements as to cultivation and residence. This is not for the purpose of exempting the land from regulated use and protection as

a part of the Forest area, but to get farmers to occupy and develop farm lands where they occur. To warrant its segregation for settlement the land must, therefore, have sufficient positive value for agriculture to make probable its occupancy and use for that purpose. The soil must be cultivable and capable of permanent agricultural use. To be listed for homestead entry, lands reserved for Forest purposes and watershed protection must, in the opinion of the Secretary of Agriculture, meet all of the following requirements:

(1) They must have a positive value for agriculture.

(2) They must be of greater permanent value for agriculture than for the primary purposes for which the Forests were created, viz, timber production or watershed protection.

(3) Their occupancy for farm purposes must not injure the National Forest. (See p. 12.)

(4) They must not be needed for public purposes.

It was furthermore clearly the intent of Congress that the Secretary of Agriculture should bring together in the National Forests the farmer and all farm land which meets the foregoing requirements. Our classification work must be done with this end in view. The examiners' reports should keep in mind the land seeker's need for information, and the results of all approved reports should be given the publicity necessary to insure the prompt settlement and development of all listed areas.

The four foregoing requirements will be considered in the order stated.

1. LAND MUST HAVE REAL AGRICULTURAL VALUE.

Before its value for agricultural purposes can be compared with the value of the land for Forest purposes, the tract must be shown to have some real agricultural value. Since compliance with the law as to settlement and cultivation is required, the land must be of sufficient value for that purpose to justify the necessary effort and expense. Small patches of land scattered here and there among the rocks or trees, even though each may have some agricultural characteristics, can not be classified as chiefly valuable for agriculture unless found reasonably contiguous and in areas sufficient to constitute a practical farm unit.

However, if desirable agricultural land adjoins other agricultural lands either listed or alienated, it should be classified and segregated as agricultural, unless such action would injure the National Forest, no matter how limited the area. The essential thing to safeguard is the permanent use of the land for the purpose classified. An isolated area is not assured of permanent use for agriculture unless large enough to constitute a practical farm unit; but the same area adjoin-

ing other agricultural land would be certain to become part of a permanent practical farm unit as a natural result of economic laws.

The acreage necessary to constitute a practical farm unit will be found to have the following range: 160 acres at high altitudes, where hay and hardy vegetables are the chief products; 40 to 60 acres of irrigable land at lower altitudes, where the leading crops are grain and forage; 30 to 50 acres of irrigable land in moderate climates, where the leading crops are forage and grain, with some fruit and vegetables; 20 to 40 acres of land in the Southern States, where the leading crops are semitropical fruits and vegetables, with some grains and forage. What constitutes a practical farm unit is a problem which has been given a great deal of consideration and is one upon which there is much enlightening data available to the examiner. For example, the farm unit established for the nearest United States reclamation projects should be considered. Usually the acreage of cultivable land necessary for a practical farm unit in any given Forest must be somewhat greater than on the nearest reclamation project, for the reason that such projects are at lower altitudes and afford a longer growing season and greater variety of products than the higher mountain lands in the Forest.

Owing to the necessity of keeping some stock on each farm to consume wastes, to perform work, to furnish meats, dairy and poultry products, and also to furnish fertilizer, it is doubtful whether any farm, as a rule, should be smaller than 20 acres. Orchards need a maintenance of soil fertility, as other growing crops do, and provision for this should be made on the farm.

Exceptions to this rule may be made in isolated sections where the maintenance of a home and the proper use of the surrounding forest range will be secured by listing an area of agricultural land smaller than would ordinarily be necessary to constitute a practical farm unit; but in no case will land be listed if the primary result would be merely a redistribution of grazing privileges.

Where water for irrigation is clearly necessary to agricultural success and is not available, or where no water can be had for domestic purposes, a unit suitable in other respects will not be listed upon individual application.

Ordinarily, if water is available under the State laws, and from an engineering standpoint, the cost of getting the water onto the land will not be taken into consideration unless this cost will be so great as compared with the final value of the land as to make the proposition clearly an impractical one, in which case the land will be classified on the basis of its merits as a "dry-farm" proposition. The same principle will apply in determining the question of an availability of water for domestic use, taking into consideration the practicability of storage by resorting to reservoirs or cisterns. In case all available

water is appropriated for use on more accessible land equally as good or equally accessible land of better character, such water can not be considered available. However, if more water is being appropriated and used than is necessary for best results, such excess will be considered available, if physically available, even though distribution can not be secured under any existing law, upon the assumption that economic conditions will eventually enforce the best distribution either by purchase or by law. The final authority on all water-right questions is the State courts, and the adjudication of water rights is therefore no part of land classification; but since availability of water is frequently the chief factor in determining value or use, any sensible attempt at land classification must give it fair consideration. All reasonable doubts should be resolved in favor of availability; but in the absence of fairly conclusive evidence to the contrary, official records for the prior appropriation of all available water will be accepted as final. If it appears possible to develop water, but that possibility is very remote, the land should not be listed. Instead it should be classified as nonagricultural, but not segregated until that point is settled, when, if efforts at water development are successful, the classification will be changed accordingly and the land listed, or, if unsuccessful, the classification will be confirmed and the land permanently segregated as nonagricultural.

2. LANDS MUST BE OF GREATER VALUE FOR AGRICULTURE THAN FOR TIMBER OR WATERSHED PROTECTION.

In determining the question whether a given tract of land is chiefly valuable for timber and watershed protection or for agriculture, the question of accessibility or market for the products of the land will not be taken into consideration. The classification proposed is a permanent classification, and the fact that there is only a rough trail to the tract and no way of getting the products to market should not be considered as influencing the permanent value of the land and preventing its listing for agricultural purposes if it is otherwise of such a character as to justify listing, since eventually all parts of the National Forests, no matter how remote, will be provided with adequate transportation facilities. On the other hand, and for exactly the same reason, the question of inaccessibility will not be taken into consideration in determining the permanent value of the land for Forest purposes. If found to be of greater permanent value for agricultural purposes than Forest purposes, the land will be listed, otherwise not. Heavily timbered lands will not be listed for entry under the Forest homestead act under any conditions. If they are so located and of such a size and character that ultimately the public interests are best served by their being under cultivation rather than under timber, they should be opened to entry

after the removal of the timber. Such areas occur in the rich valley bottoms of certain Forests of the Northwest. Unfortunately, experience has repeatedly demonstrated that to open such areas to homestead entry retards agricultural development rather than hastening it. This is owing to the timber value inviting speculation and crowding out the farmer. On heavily timbered lands the homesteader invariably sells to some lumber company as soon as he gets his patent. Such lands are then held in vast acreage until such time as the lumber company chooses to cut and remove the timber, when the logged-off lands are sold for farm purposes. Therefore such lands will be classified as chiefly valuable for timber, but at the same time the report should recommend them for reexamination should the timber be cut and removed. In which event, if, upon examination, they are found then to be chiefly valuable for agriculture they should be so classified and listed for settlement and entry.

When an application is received for the purchase of timber standing upon lands so recommended for reexamination, the value of such timber should be determined by the usual methods of appraisal based upon the best accepted methods of marking and brush disposal established for that type. After the valuation has been determined, a determination should be made by the branches of Lands and Silviculture as to whether the land will or will not probably be classified as agricultural after the removal of the timber. If the decision is favorable to agriculture, the timber will be marked for clear cutting, and only such disposal of brush and refuse will be required as may be necessary to protect the surrounding forest areas. In no case can the timber be sold at less than its appraised value, nor should the land be formally classified and listed as agricultural until the timber is actually removed so that the classification is justified by the facts.

On the other hand, there may occur here and there patches of land under heavy timber which are cultivable, but which are so intimately an integral part of the Forest that they can not be segregated without destroying, from an administrative standpoint, a Forest unit. A certain advantage is gained from a Forest standpoint by a limited amount of settlement in or near each Forest unit, but a Forest should not be shredded by alienations to a point making protection, general administration, or application of Forest management impractical. In the progress of settlement a point is ultimately reached where a choice must be made between refusing to list additional areas or abandoning the entire Forest unit, regardless of the character of the remaining lands.

Not always will it be either possible or practicable to fairly appraise the agricultural or forest value of a given tract of land by the

apparent value of each small unit of area for a given purpose. Agricultural lands are most valuable when subdivided into reasonably small farm units, but forest lands are most valuable when handled in large, unbroken units. Therefore, it frequently happens that if we should list a portion of a tract for agricultural use and retain the remainder for Forest purposes the result is that the combined area of farms and forest is less valuable than the unbroken forest; in other words, more value was lost by listing than was gained. Such tracts should have been classified as a whole as a Forest unit and chiefly valuable for that purpose. Because of the fact that the successful practice of forestry requires comparatively large units, care should be taken where great forest value is at stake to define the boundaries of the Forest unit. Such a Forest unit, when so designated by the Secretary of Agriculture, will then become a permanent retention area within which no land will be listed, even though certain tracts therein, when valued without relation to the surrounding area, appear to have agricultural possibilities.

The inextricable intermingling of forest and agricultural value, together with the fact that Forests are most valuable and most useful when handled in large units and agricultural land most valuable and productive when handled in small units, requires the application of a policy which takes into fair consideration the requirements of both and the evident purpose of Congress in directing classification. In many Forests it will be possible to classify all lands according to their value by units as small as practicable for farm purposes, and list all land which may be classified as listable under the law. In a few special cases it will be necessary to appraise the land by large units and define such units as permanent retention areas. By classes such cases may be:

(1) Where the listing of the land with agricultural soil would shred a large area of forest land without resulting gain sufficient to offset the loss which must follow because the remaining forest area can not be practically managed.

(2) Where a considerable area of forest is clearly of great economic value to the Nation or State and an attempt to transform it into an agricultural country might result in irreparable disaster by disturbing a well established climatic or economic equilibrium.

(3) Where small areas in their present condition are found to be of little forest value and but slightly greater agricultural value when viewed without relation to the surrounding area, but are entirely surrounded by forest lands of a very valuable type, they should be retained if necessary to preserve the integrity of the area as a practical Forest unit. Furthermore, such areas by a little work or expense may often be made a producing part of a well-rounded and logical Forest unit and thereby greatly increase its value for that purpose; as, for example, a burned flat in a white-pine unit in northern Idaho.

Watershed protection is one of the dominant purposes of the Forest. Under no circumstances should land be released which is necessary for this purpose. This refers not only to the alienation of slopes which should be retained as a whole under public control, but to the bottoms of gulches where the removal of the tree or brush cover would, in the long run, result in a scouring by the flood waters with disastrous effects on the water flow. Watersheds must, from their very nature, be handled and considered as large units. An area of 100 acres is only one ten-thousandth part of a watershed comprising a million acres, upon which may depend the value of many thousands of homes and homesteads. The ill effects of the mishandling of the 100 acres would be spread over such a large area as to be difficult to trace or estimate. Yet, ordinarily, the damage will be no less real and actual if the area listed is of the average slope and character of the entire watershed. Under no circumstances should land on an important watershed be listed if the slope is so great that the soil is certain to be washed to such an extent as to destroy the fertility of the land. In the Appalachians the Government is now purchasing exactly such lands for watershed protection. It would manifestly be the height of folly to list to-day lands which it may be necessary to buy back for protection purposes to-morrow.

No land should be listed on a watershed from which the water supply of any municipality is drawn if such listing would menace the public health through danger of pollution.

In the case of shoestring areas extending through the Forest, controlling not only the outlet for the timber above but also for the forest areas on each side of the valley area, it is often impossible to forecast just what rights of way are necessary and where they should be located, and the only way the Forest can be protected against permanent injury is to except the entire area for listing. Therefore such areas will fall into the same class as the heavily timbered lands having soil and climate favorable to agriculture, and will be classified as nonlistable, but will not be segregated as such for the reason that a change in conditions, as a timber sale on the heavily timbered lands or legislation providing for all necessary rights of way across shoestring areas might make a reclassification possible and desirable.

3. THE LISTING MUST NOT INJURE THE NATIONAL FORESTS.

As has been shown on another page of this outline, the law prohibits the listing of land where such action would injure the National Forests. If the listing will seriously interfere with or hamper the administration, protection, or use of the National Forest then the listing is injurious. To shred a Forest unit with alienations so as to

render administration, protection, or use impracticable can not be permitted. It is useless to administer a Forest if it can not be protected. It is equally useless to administer and protect if it can not be used. It follows, therefore, that not only is it necessary to retain such areas as may be required to protect and administer the Forest, but it is also necessary to retain such tracts as may be required for the practical use of the surrounding forest areas.

In order to use and dispose of the timber which is raised in the Forest, it is necessary to retain the lands essential to its outlet, such as mill sites, camp sites, banking grounds, logging roads, chutes, etc. To utilize the forage resources of the Forest and avail ourselves of grazing as a practical protective measure against fire, it is necessary to maintain practical grazing units. For the practical handling of stock watering places are necessary at reasonable intervals, lambing grounds are required in some sections, stock driveways are necessary, and holding grounds are essential under some conditions. In fact the grazing administration of the Forest is so tied in with its use for other purposes that before any land is listed each section of the Forest working plan should be considered to see if the listing of the land would injure the interests of the Forest.

The organic act providing for the creation of National Forests provided that they should be at all times free and open to the public for all lawful purposes. It is, therefore, necessary to make provision for travel throughout the Forest. This is also necessary to provide for the protection and administration of the Forest and the utilization of its products. Any area necessary to provide for such travel is essential to practical Forest administration, and the administrative and protection chapters of the Forest working plan should provide for the permanent retention of such areas, and proper consideration should be given to them by each examiner in the progress of his classification work.

Congress has, from time to time, recognized the use of public lands for the needs of the Reclamation Service in irrigation work; it has also provided for rights of way for reservoirs, dams, canals, and other construction used in irrigation; it has likewise provided for water-power development in the National Forests. In the administration of the Forest homestead law, and in land classification, care should be taken not to alienate land the private ownership of which would retard development under any of the foregoing provisions. The land-classification work must, therefore, be tied in closely with the water power and irrigation chapter of the Forest plan.

4. THE LAND MUST NOT BE NEEDED FOR PUBLIC PURPOSES.

It is specifically provided in the Forest homestead law that lands should be retained which are required for public purposes. Any

land which is needed for the proper administration of the resources of the Forests, to make them serve the highest possible use consistent with the purposes for which they were created, must be retained in public ownership. This applies not only to the maintenance of practical boundary lines, both exterior and interior, but applies also to areas needed for ranger stations, pastures, lookout stations, roads, trails, telephone lines, fire breaks, and every other area needed in the work of the government officers, charged with the protection and administration of the National Forests. It also applies to all areas within the Forests which are needed for public camping grounds, health or pleasure resorts, or other purposes for the use of the public. The land-classification work must, therefore, tie in closely with the protection and administration chapter of the Forest plan.

In brief, all land-classification work and settlement work must be consistent with the Forest plan, which plan in every case has been drawn for the purpose of carrying out the plain intentions of the law. Therefore no Forest officer or party should attempt to classify the land in a Forest without first studying carefully the plans for the Forest, which plans must in turn be consistent with the organic law providing for the creation of the National Forests, as modified or extended by other and related legislation.

MINERAL v. AGRICULTURAL VALUE.

Since the law provides that all land in the National Forests may be taken up under mineral laws, there will ordinarily be few cases of conflict between mineral values and agricultural values. Usually mineral value need not be considered for the reason that if of apparently real value for mineral, the land might be more easily taken up under that law than under the homestead law. However, if the land is found to be held under mineral location, further consideration is necessary. If the land is being worked and held apparently in good faith for mining purposes, it will be classified as not chiefly valuable for agriculture. However, land is sometimes held under mineral location as a subterfuge because the locator has exhausted his homestead right or for some other reason. If the land is clearly valuable for agriculture and not apparently of real value for mineral, it will be examined for its mineral value by a qualified mineral examiner. His findings shall be considered by the classifying officer, and if as a result of his report and the investigation of the agricultural value of the land it is found to be chiefly valuable for agriculture it will be so classified and listed for homestead settlement. If the mineral claimant does not accept such classification as correct, he may contest the agricultural applicant's right to file in accordance with the established procedure of the General Land Office.

PROCEDURE.

The classification work already completed has shown that under certain conditions it is practicable to settle the agricultural-land problem by a revision of the Forest boundaries, eliminating land having possible agricultural value with forest value too low to warrant this retention in the Forest, thus avoiding the necessity of a detailed and expensive study of agricultural possibilities. The practice shall continue, eliminating all lands which it is not desired to retain because of their low forest value; but the recommendation for elimination should not be taken as indicating positive agricultural value. On the other hand, lands should not ordinarily be listed under the Forest homestead act merely because they have such small forest value that it is not desired to retain them, since to do so is to classify them as "chiefly valuable for agriculture" and may mislead homeseekers to their serious injury and disappointment. Instead such lands should be eliminated, unless the land is applied for by an applicant who has examined the land, in which case the agricultural value conceded to the land is only such as is claimed by the applicant himself.

Hereafter land classification will comprise the following lines of work:

(*a*) Boundary revision.

(*b*) Extensive examination of areas for which considerable data is available, showing little agricultural possibilities and overshadowing timber or watershed value.

(*c*) Intensive examination of areas believed to have considerable agricultural value and doubtful value for timber or watershed purposes.

(*d*) Examination of small areas upon individual application to avoid the delay of waiting until reached in the progress of the regular classification work.

In the latter case it is highly important that a consistent course be followed, to the end that justice may be given each individual application, and at the same time that this piecemeal work of classification may not destroy the practicability of the Forest working plan or present an incongruity when reached and covered in the progress of the systematic classification work.

DETERMINING KIND OF CLASSIFICATION WORK TO BE DONE.

For each Forest this depends, first, upon the amount of knowledge or data we have regarding it and the evidence of agricultural value which that information contains. Excepting in very unusual cases it will be necessary to use several methods on each Forest. Obviously it would be a great waste of money to make a detailed study

of climate or soil conditions on high, rugged mountain lands, broken slopes heavily covered with timber, and other areas where the practice of agriculture is clearly impractical. Therefore, such lands may be covered by extensive classification, leaving for intensive classification the doubtful areas where there appears to be some possibility of farm development.

Intensive classification methods will be used on all areas excepting such as are clearly shown to be nonagricultural or nonlistable under the Forest homestead act. To secure the maximum of efficiency in intensive classification work the examining parties will be assigned to the areas of greatest probable agricultural value. Much time will be saved for such parties by the process of having the areas of possible agricultural value located and designated by preliminary extensive classification work.

ORGANIZATION OF THE WORK.

A. Boundary Revision.

Where it appears probable that a part of the classification problem on a particular Forest can best be settled by an elimination, a careful boundary reexamination should be made which will furnish sufficient information to make possible the drawing of new boundary lines. Where, however, it is a question between Forest purposes and agricultural value the examination of the questionable area should be left for careful consideration under intensive examination.

Recommendations for boundary changes should be submitted in accordance with previous practice. After approval by the Forester of a proposed elimination, no more applications for listing of the lands in that area will be accepted unless the new boundary proclamation is so delayed as to seriously hamper settlement, in which case, upon proper showing, the district forester will receive individual applications for surveyed land and list without further examination.

B. Extensive Agricultural Classification.

The object of extensive classification work is to avoid the delay and expense of requiring the intensive study of areas clearly nonlistable under the act of June 11, 1906. The majority of our Forests have been under continuous supervision, protection, and use for periods ranging from 5 to 15 years, during which period the Service has accumulated a vast amount of very detailed and reliable information regarding them. Consequently, it is not necessary nor is it good business to require our land-classification parties to duplicate the work already done. It is planned, therefore, to combine and correlate in the extensive report both the written and unwritten information which the Service and its officers have already secured

regarding all lands within each National Forest. Where such information shows conclusively that a given area is nonlistable, further investigation is unnecessary; where, on the other hand, the report on any given area leaves the matter in doubt it will be examined intensively.

For this work a large party will ordinarily not be necessary. The data should be assembled, weighed, reviewed, and correlated by a Forest officer who should have broad experiences, liberal ideas, and extensive general farm experience, or who should be assisted by the direction and advice of an experienced agriculturist familiar with the general farm practice of the region.

The written report should ordinarily deal with township units where this is practicable, qualifying the report by specific reference to such portions as vary from the general characteristics of the area and describing such variation in detail. The report should be accompanied by a map of the unit, preferably on a scale of 4 inches to the mile, showing cover and topography, and indicating all lands otherwise of possible agricultural value which are needed for public purposes or to carry out the intent of other laws as already fully explained. Excepting in unusual cases the report need not be accompanied by a soil map. Ordinarily, if a soil survey is necessary to determine whether or not the land in question is chiefly valuable for agriculture, the area will be included in an intensive classification project. No attempt will be made to classify alienated land; but the use to which such land is put may throw light on the question of the highest value of the land.

If the examining officer is doubtful as to the final classification of any land within the limits of the project he will omit it from his report and the questionable area will be passed upon in the progress of intensive work. Usually, if any land in a section is doubtful, the entire section will be left blank and the total acreage included in the report as unclassified. The fact that such area was passed as doubtful in the extensive examination will not influence the decision made upon intensive examination.

The officer in charge of the extensive classification work on each Forest shall prepare a report for the Forest as a whole covering the following points:

(1) Value and importance of the Forest as a source of timber supply and need of retaining it for timber production.

(2) Value and importance of the Forest as a watershed and need of retaining it to preserve the natural cover for the regulation of stream flow.

(3) The general character of the land which should be classed as agricultural.

(4) The need of retaining lands having agricultural or other non-Forest value in order to preserve the integrity of the Forest and make possible its practical administration, protection, and fullest use.

(5) Forest and agricultural history before and after withdrawal for Forest purposes, and any other facts bearing upon the character and value of the land.

This report should be accompanied by a diagram of the Forest, showing the area classified as nonagricultural and the area pending classification. When the suspended area is finally classified by intensive examination, the diagram will be brought up to date and the agricultural land indicated.

The general report and map for each Forest will be bound separately in heavy binders, atlas size, and will be followed by the detailed reports and maps by units. All reports will be typewritten in double column on atlas-size paper, with 2½-inch margin on the left-hand side for binding. Each report will be followed by the map of the unit area. When doubtful sections in each unit area are covered by intensive classification, the unit map will be corrected to show the final classification, and a synopsis will be added to the unit report, showing the final results of the intensive examination of the suspended areas, giving the date of report and name of officer in charge and referring to the original report for details. The intensive classification reports will be typewritten on letter-size paper and kept in vertical files by Forests. The map prepared by intensive work will be kept in atlas binders, arranged alphabetically by Forests. All land-classification maps and reports will be prepared in triplicate, one for the supervisor's records, one for the district office, and one for the Washington office.[1]

C. Intensive Agricultural Classification.

Plans for intensive agricultural classification should be approved by the district forester, and he should notify the Forester of the undertaking of the project, with a brief description of the problems involved and his arrangements for working them out.

The organization for conducting the work should ordinarily be the same as that developed during the past two seasons. The Forest officer selected by the district forester should be in charge. He should be competent to direct and carry on the timber cruising, surveying, and map making necessary. He should be furnished with such assistance, camp outfit, instruments, etc., as the project requires. Where the problem is such that it appears desirable to

[1] The instructions for extensive land classification issued from the Ogden office will be followed by the different districts until such time as revised instructions are prepared by the Forester.

make a detailed study of soil fertility or crop productiveness the situation should be reported in full to the Forester, who will arrange for the necessary expert assistance. The relation which such expert will bear to the party and his responsibility and authority in handling the classification will necessarily be determined by the terms and nature of his detail in each given case.

The Forest officer in charge should make a careful and detailed study of the Forest and other nonagricultural values of the area, paying particular attention to the lands classed as agricultural by the expert, and should submit to the district forester the information thus gathered in the shape of a map on the scale of 4 inches to the mile, and a report, with recommendation, as to what portions of the are should be classified as chiefly valuable for agriculture. These data should be sufficiently accurate and presented with sufficient clearness to make possible the listing and opening to entry of any tract within the project, afterwards adjudged to be chiefly valuable for agriculture, without further field work.

Where the lands covered by intensive classification work are not chiefly valuable for Forest purposes and are so located that they can easily be segregated from the lands which are chiefly valuable for Forest purposes, or if more than 50 per cent of the land is plainly chiefly valuable for agriculture while the remaining portion is of low forest or watershed value and can not easily be segregated, recommendation should be made for elimination, unless some unusual condition makes such action inadvisable, in which case a full and complete report should be submitted for the Forester's determination as to what course should be pursued.

The information furnished by the report and map should cover the following points:

1. Value of the area for Forest purposes.
   - *a.* Value as a source of timber supply—present and future.
   - *b.* Value as a source of water supply and need for watershed protection.
2. Need of retaining for Forest purposes any of the land designated as agricultural by the Bureau of Soils, so as not to prevent the accomplishment of the purposes for which the Forests were established.
   - *a.* To preserve the integrity of the Forest unit. It must be recognized that the objects of the National Forests, viz, the production of timber and the regulation of stream flow by the protection of the watershed cover, can not be accomplished if the Forest is allowed to become so shredded by private holdings that it ceases to be a practicable unit for protection and administration.

b. For proper administration of the Forest, including areas needed for ranger stations, Government pastures, lookout stations, etc.

c. For the proper protection and administration of recognized uses of the Forest, including tracts needed for logging rights of way, log landings, public camping grounds, areas needed in the administration of grazing, fire protection, etc.

d. To prevent the listing of lands chiefly valuable for timber rather than agriculture. Agricultural land carrying a heavy stand of timber of such value that the timber speculator, in the place of a bona fide home builder, would seek to acquire title will be classified as chiefly valuable for Forest purposes, and will not be opened to entry until the timber has been removed.

3. The necessity of withholding land, the disposition of which is provided for by existing laws. In this class are water power or irrigation sites, and mineral or medicinal springs.
4. Exceptional value of the land for special uses not above enumerated, as for example, for town-site purposes, hotel sites, etc. The disposition of such cases will be handled finally in the Forester's office, with reference to such authority as may exist at the time action is taken.

D. Examination of Land on Individual Application (Settlement Work).

On unclassified areas and areas not included in an approved intensive classification project the settlement work should continue as heretofore. Tracts applied for should be examined and reported upon as soon as possible. In classifying such tracts the general principles laid down in the foregoing pages should be followed.

Meanwhile each forest supervisor should be required to formulate and submit to the district forester a clear and concise set of general rules to be followed in handling individual settlement cases on his Forest pending permanent classification. When approved by the district forester, Forester, and Secretary of Agriculture, these rules will act as a general guide for all officers handling settlement work on that Forest. When exceptions are made to any rules in acting on any given case, an explanation will be required. These rules should ordinarily be few in number for each Forest and should deal only with the principal factors which influence listing or rejection. Necessarily they will vary as conditions vary on different Forests but should be uniform for uniform conditions. On Forests having a variety of conditions, different rules may be required for different districts.

Pending the systematic classification of the Forest, each forest supervisor should give his most earnest consideration to the problem of units of Forest management and permanent retention areas.

Usually it will not be possible to decide their boundaries until the entire Forest has been carefully examined for classification purposes; but this preliminary study on the part of the supervisor will usually be of great value in reaching a final decision when all other pertinent data is assembled for consideration.

Application for tracts within the projects which are in process of intensive classification should ordinarily not be acted upon until after completion and final approval of the classification, unless they are for areas so clearly listable that action upon them can not prejudice the classification involved. All applications for lands in intensive projects will be received by the district forester and, in the event the lands can not be immediately listed, the applicants should be advised of the intensive classification being made and the necessity of waiting the results of the classification before final action is taken on the application.

THE ESTABLISHED CLASSES OF LAND.

When lands in the National Forests are finally classified and segregated their status is permanently established. Listable land is open to application, settlement, and homestead entry. If the land has not been finally classified and segregated, its classification may be reconsidered at any time and changed if it is found that the first classification was erroneous or that changed conditions have resulted in changing the value of the land. Examination for classification purposes will result in each area of land which has been examined being placed, as it is found to belong, in one of the three following classes:

(1) Land classified and segregated as chiefly valuable for agriculture. List upon application or otherwise.

(2) Land classified and designated as nonagricultural are nonlistable. Reject all applications and close to further application.

(3) Lands classified as nonlistable but not segregated because a change in condition may result in changing the value of the land. Reject all applications but withhold final segregation until permanent values are determined. In this class of cases will fall tracts of heavily timbered lands which may be opened to homestead entry after the sale and removal of the timber; also areas which are chiefly valuable for right-of-way purposes not practicable to protect under existing laws; also land classified as nonagricultural because of doubtful possibility of water development. In all such cases, if the land is listed within three years from the date of the rejection letter written upon the first classification, the applicant will be written at his last-known address and asked if he desires that his original application be reinstated as of initial date. If an affirmative reply is received, the land will be listed for such first applicant. If no reply

is received within 30 days, his application will be treated as withdrawn, and the area listed without naming a preference applicant. Exceptions may be made to this rule in order to complete homestead units listed only in part.

APPROVAL OF CLASSIFICATION PROJECTS, APPEALS, ETC.

Final action upon any classification project will be taken by the Secretary of Agriculture. Recommendations for eliminations and for the listing of lands under a detailed classification project will be submitted by the Forester to him for his final approval. Favorable reports of individual settlement cases will be handled as heretofore. Recommendations for listing will be sent through the Secretary for final action. In cases where the district forester finds the land applied for as not chiefly valuable for agriculture and notifies the applicant of the rejection, the latter has a right to appeal to the Forester, in accordance with established procedure. If, in reviewing the case, the Forester finds grounds for reversing the district forester's decision, he will take such action immediately. If he finds grounds for sustaining the district forester's decision he will then submit the case to the Secretary for final action. If the status of the land is such that the Forest Service is without jurisdiction, or if the area applied for has been regularly classified as nonagricultural or nonlistable and segregated in accordance with the provisions of the act of August 10, 1912, the application will be returned to the applicant, and no appeal or motion to reconsider will be sustained.

CLASSIFICATION BASED ON SETTLEMENT REPORTS.

In handling settlement cases on application and individual report, in case the land is classified as nonlistable the applicant will be so advised by registered mail, and the reasons stated upon which the classification is based. The applicant has 30 days in which to appeal from this decision.

Beginning July 1, 1914, each district forester will submit quarterly a report on all areas examined on individual report and classified as nonlistable and not subject to appeal. This report will be submitted on Form 703 and should be accompanied by the report and entire record in each case. Upon approval by the Forester and Secretary this classification and segregation becomes permanent. In order to bring the work of classification and segregation under the act of August 10, 1912, up to date as rapidly as possible each district should submit as soon as practicable such a report on this form for each Forest in the district, covering all areas so examined and rejected since the passage of the above act and prior to March 1, 1914. The first district quarterly report will therefore cover all cases not ap-

pealed in which reject letters were written after February 28, and prior to June 1, 1914. These reports will include all lands classified as nonlistable in which the period allowed for appeal has expired, whether for all or only a portion of the area applied for. Where a portion of the land applied for has been recommended for listing and the report and record has been transmitted to the Forester's office and has not been returned to the district office, a yellow memorandum sheet to that effect will be inclosed.

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